



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,140	12/23/2005	Yoshifumi Adachi	12480-000155/US	5533
30593 7590 11/18/2010 HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195				
EXAMINER				
REDDY, KARUNA P				
ART UNIT		PAPER NUMBER		
1764				
MAIL DATE		DELIVERY MODE		
11/18/2010		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,140

Applicant(s)

ADACHI ET AL.

Examiner

KARUNA P. REDDY

Art Unit

1764

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-10, 12-21 and 23-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-10, 12-21 and 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB06)
Paper No(s)/Mail Date 7/1/2010
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. This office action is in response to amendment filed 9/10/2010. Claims 23 and 28 are amended; claims 1, 11 and 22 are cancelled. Accordingly, claims 2-10, 12-21 and 23-28 are currently pending in the application.

This action is made final in light of limitations to the claims that are newly presented following the preceding office action.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mertens et al (WO 00/53644) in view of Nakashima et al (US 2004/0106745 A1).

It is noted that WO 00/53644 (WO) is being utilized for date purposes. However, since WO is not in English, US equivalent for WO, namely, Mertens et al (US 6, 605, 673 B1) is referred to in the body of the rejection below. All column and line citations are to the US equivalent.

Mertens et al disclose in example 1, a polyacrylic acid powder obtained by the polymerization of acrylic acid (i.e. reads on unsaturated monomer containing an acid group) which is crosslinked using a mixture of crosslinkers (i.e. reads on particulate water absorbent resin (A) having a crosslinked structure). The particles are screened to a size of 150 to 850 μm (i.e. reads on 95 wt% or more particles having a particle

diameter less than 850 μm and not less than 106 μm). The obtained polymer powder is treated with a solution of ethylene glycol and aluminum sulfate 14-hydrate (i.e. reads on surface crosslinking and multivalent metal component of instant claim) (bridging paragraph col. 9-10). See table (col. 10, lines 10-15) wherein example 1 has a TB of 28.5 g/g (i.e. reads on CRC of instant claim), $\text{AAP}_{0.7}$ of 25 g/g (i.e. reads on AAP of instant claim), and SFC of $65 \times 10^{-7} \text{ cm}^3\text{s/g}$ (i.e. reads on SFC of instant claim). See col. 8, lines 38-67, wherein Mertens et al disclose the test conditions for measuring TB (immersed in 0.9% NaCl for 30 minutes without any load) and AAP (absorb 0.9 wt% saline is absorbed for 1 hour under a pressure load of 50 g/cm^2) which meet the instantly claimed test conditions. It is noted that 50 g/cm^2 is equivalent to 0.7 psi.

Mertens et al are silent with respect to weight average particle diameter, logarithmic standard deviation, metal extraction rate, and wt% of water-soluble component and method of measuring it.

However, Nakashima et al teach water absorbing agent having weight average particle diameter of 300 to 600 μm (abstract). Case law holds that when the range of instant claims and that disclosed in prior art overlap, a prima facie case of obviousness exists. See *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976). See MPEP § 2144.05. The water absorbing agent includes particles having particle diameter of smaller than 850 μm but not smaller than 150 μm (paragraph 0135) as in Mertens et al and instant claims. The water absorbing agent includes particles from at least two members selected from particles (A1) having particle diameter of from 600 μm to 850 μm ; (A2) having particle diameter of from 500 μm to 600 μm ; (A) having particle diameter of from 300 μm to 500 μm ; and (A4) having particle diameter of from 150 μm to 300 μm (paragraph 0136). The high properties are achieved because of controlling such

specific diameter distribution (paragraph 0137). The absorption rate which is dependent upon the surface area of particle is controlled in good balance because the water absorbent agent includes particles having the respective particle diameter ranges (paragraph 0138). Therefore, in light of the teachings in Nakashima et al and case law, it would have been obvious to one skilled in art at the time invention was made to select the overlapping range of from 300 to 500 μm , for weight average particle diameter, to obtain desirable properties, such as controlled absorption rate.

With respect to the logarithmic standard deviation, given that particle diameter of water absorbent resin ranges from 150 μm to 850 μm in Mertens et al, Nakashima et al and instant claims, and the average particle diameter in Nakashima et al, overlaps with instantly claimed average particle diameter of 300 to 500 μm , reasonable basis exists for one skilled in art to expect the logarithmic standard deviation of the particle size distribution of the water absorbent resin composition, of Mertens et al in view of Nakashima et al, to be 0.45 or less as in instant claims. Since PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an unobviousness difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

With respect to the metal extraction rate, given that water absorbent resin composition of Mertens et al comprises substantially similar components as in instant claims (i.e. water absorbent resin and a polyvalent metal compound, such as aluminum sulfate 14-hydrate on the surface of water absorbent resin), metal extraction rate of 8.0 wt% or more and less than 90 wt% is intrinsically present in the water absorbent resin composition of Mertens et al, absent evidence to the contrary. Since PTO cannot conduct experiments, the burden of proof is shifted to the applicants to establish an

unobviousness difference. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977).

With respect to the wt% of water-soluble component and method of measuring it, Mertens et al teach in the general disclosure that from 0 to 30 wt% of water-soluble polymer, such as poly(acrylic acids) is included as water-soluble polymer in the water-absorbent polymer product (col. 5, lines 49-51). Furthermore, Nakashima et al teach that water-extractable content (i.e. water-soluble content) can be measured by adding water-absorbent resin to the physiological saline solution and stirring (paragraph 0023) as in instant claims. Therefore, Given that the water-absorbent-resin of Mertens in view of Nakashima et al is made by a substantially similar process as in instant claims and has the water-soluble polymer content of less than 30%, and the method of measuring water-extractable (i.e. water-soluble component) is known, it would have been obvious to one skilled in art at the time invention was made to obtain a water-absorbent resin composition comprising < 35% by weight of water-soluble component based on the teachings in Merten et al and Nakashima et al, absent evidence to the contrary. Additionally, present claims are directed to a product written in product-by-process form. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985)

Allowable Subject Matter

4. An updated search was conducted and no new art was found. It is noted that scope of amended claim 23 remains the same and the amendment is done for clarity. Thus,

reasons for allowance of claims 2-10, 12-21 and 23-27 remain the same as set forth in paragraph 5 of a Notice of Allowance mailed 2/23/2010.

Response to Arguments

5. Applicant's arguments filed 9/10/2010 have been fully considered but they are not persuasive. Specifically, applicant argues (A) water-soluble polymer products disclosed in Mertens are different from the water-soluble component of the water-absorbent resin composition recited in claim 28; (B) even when 0 to 30 wt% of the water-soluble polymer products is included in the water-soluble polymer as taught in Mertens, the value obtained by measuring the amount of water-soluble component in the water-soluble component extract solution is not necessarily 35 wt% or less as recited in instant claims; (C) Mertens does not recognize the criticality of water-soluble component of the water absorbent being 35 wt% or less. The examiner is reminded that differences in concentration or temperature will not support the patentability of subject matter encompassed by the prior art unless there is evidence indicating such concentration or temperature is critical; (D) even if the weight average particle diameter ranges from 300 microns to 500 microns, the particle size distribution changes depending on what kinds of particles are selected from the four kinds of particles.

With respect to (A), firstly, instant claim only recites that water-soluble component is extracted from the water-absorbent resin composition by mixing it with saline solution. Secondly, it is not clear how the water-soluble component of Mertens differs from that in instant claims. Given that the water-absorbent resin composition of Mertens et al in view of Nakashima comprises the instantly claimed amount of water-

soluble component and the process for measuring water-extractable component is known, it is the examiner's position that water-absorbent resin composition of Mertens in view of Nakashima et al comprises the instantly claimed wt% of water-soluble component and can be measured by the instantly claimed process.

With respect to (B) and (D), it is the examiner's position that the statement "the value obtained by measuring the amount of water-soluble component in the water-soluble component extract solution is not necessarily 35 wt% or less as recited in instant claims" and "the particle size distribution changes depending on what kinds of particles are selected from the four kinds of particles" are conclusory statements not supported by evidence i.e. attorney's statements are not a substitute for factual evidence.

With respect to (C), Mertens et al discloses the addition of up to 30% by weight of water-soluble polymer. Nakashima et al teach that when amount of water-soluble component exceeds 35 wt%, it elutes at the time of water-absorption and functions like a binder, so that gel blocking tends to occur. Hence, it is the examiner's position that disclosure in Mertens combined with teachings in Nakashima et al provide the motivation to use water-soluble component in amounts of less than 35 wt%.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KARUNA P. REDDY whose telephone number is (571)272-6566. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business

Art Unit: 1764

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. P. R./
Examiner, Art Unit 1764

/Vasu Jagannathan/
Supervisory Patent Examiner, Art Unit 1764